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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* SHUNPEI YAMAZAKI,  
JUN KOYAMA, and YU YAMAZAKI

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Appeal 2009-000918  
Application 09/833,674  
Technology Center 2600

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Decided:<sup>1</sup> June 16, 2009

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Before JOSEPH F. RUGGIERO, MAHSHID D. SAADAT,  
and MARC S. HOFF, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 1-3, 6-9, 12, 35, 38, 43, 46, 51-53, 56-59, 62, 85, 88, 93, 96, and 109-116. Claims 4, 5, 10, 11, 36, 37, 44, 45, 54, 55, 60, 61, 86, 87, 94, 95, and 101-108 have been canceled while claims 13-34, 39-42, 47-50, 63-84, 89-92, and 97-100, which are all of the remaining claims pending in this application, have been withdrawn from consideration. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

### STATEMENT OF THE CASE

Appellants' invention relates to a system for identifying an individual using a sensor-incorporated display for reading the biological information of a user (Spec. 2:23-25). According to Appellants, the display includes a sensor portion having a plurality of pixels, wherein each pixel includes the circuitry for activating the pixel, an electroluminescent element, and a photodiode for sensing the biological information (see generally *id.* at 11:4 – 13:23).

Independent claim 1 is illustrative of the invention:

1. A system for identifying an individual, comprising:
  - a display device having pixels, each of which includes a light emitting element and a sensor for reading biological information of a user;
  - a flash memory for storing reference biological information of said user;
  - means for judging legitimacy of the user by checking read biological information with the reference biological information; and
  - means for transmitting information about the judgment to a destination of communication when the read biological information has matched the reference biological information,wherein

the light emitting element comprises a cathode, a light emitting layer, and an anode.

The Examiner relies on the following prior art references in rejecting the claims:

Nishimura	US 6,040,810	Mar. 21, 2000
Wang	US 6,175,922 B1	Jan. 16, 2001
Harkin	US 6,327,376 B1	Dec. 4, 2001 (filed Dec. 3, 1998)
Ritter	US 6,657,538 B1	Dec. 2, 2003 (filed Sep. 28, 1999)

Claims 1-3, 6-9, 12, 35, 38, 43, 46, 51-53, 56-59, 62, 85, 88, 93, and 96 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Ritter in view of Harkin and Wang.

Claims 109-116 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Ritter, Harkin, and Wang in view of Nishimura.<sup>2</sup>

Rather than repeat the arguments here, we make reference to the Briefs and the Answer<sup>3</sup> for the respective positions of Appellants and the Examiner.

## ISSUE

The Examiner's position is that Ritter discloses the claimed display device except for the display device having pixels, each of which including a light emitting element and a sensor (Ans. 3-4). The Examiner finds that Harkin discloses (col. 9, ll. 14-63) a fingerprint sensing device using transparent sensing electrodes combined with a flat panel display device that

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<sup>2</sup> The Final Rejection of the claims is repeated in pages 3-11 of the Examiner's Answer.

<sup>3</sup> We refer to the Appeal Brief filed Mar. 7, 2008, the Reply Brief filed Jun. 9, 2008, and the Answer mailed Apr. 8, 2008.

may be an electroluminescent display (Ans. 4-5). The Examiner further finds (Ans. 5-6) that Wang discloses the device for judging legitimacy of the user and the storage of the identification data that are missing in Ritter. The Examiner concludes that it would have been obvious to apply Harkin's electroluminescent display to the biological sensing device of Ritter in combination with Wang "in order to dispose the sensing device over a display while still allowing the output of the display to be viewed" (Ans. 4).

Appellants contend that while Harkin discloses, with respect to the embodiment shown in Figure 5, a light source associated with the biometric sensor, no display device or display elements associated with the biometric sensor are disclosed (App. Br. 7). Appellants argue that Harkin's mention of an electroluminescent display suggests a possible display to be used instead of the disclosed liquid crystal display, but does not enable one of ordinary skill in the art to include a light emitting element and a sensor for reading a user's biological information without undue experimentation (Reply Br. 2).

The issue is whether Appellants have shown that the Examiner's combination of the reference teachings is improper and the Examiner erred in rejecting the claims under 35 U.S.C. § 103. Specifically, the issue turns on whether there is a legally sufficient justification for combining the disclosures of Ritter, Harkin, and Wang and if so, whether the combination of the applied references teaches the claimed subject matter.

#### FINDINGS OF FACT

The following findings of fact (FF) are relevant to the issue involved in the appeal.

1. Harkin discloses a fingerprint sensing device (10) having an array of sensing elements (12) on a transparent substrate (35) for sensing capacitively the ridge pattern of a fingerprint placed over the array. (Abstract, Fig. 5.)

2. As shown in Figure 5, the fingerprint sensing element array 10 is carried in housing 50 with its sensing surface 37 onto which a user's finger is placed facing outward. (Harkin, col. 7, ll. 60-63).

3. Harkin further describes a biometric sensor 60 disposed within the housing beneath the sensing array for sensing a different biometric characteristic of the person's finger by means of light directed through the transparent array at the same time as the fingerprint is being sensed. (Harkin, col. 7, l. 63-col. 8, l. 1).

4. Harkin describes the sensor as having a light source, such as an LED, emitting red and infra-red light beams which are directed onto human tissue and a detector which receives the light transmitted through or reflected from the tissue. (Harkin, col. col. 8, ll. 3-6).

5. Harkin, as shown in Figure 6, provides for the fingerprint sensing array 10 in combination with a flat panel display device 70, such as a matrix liquid crystal (LC) display device which may comprise a pair of plates 71, 72, usually of glass, spaced slightly apart and sealed together around their periphery, with the LC material 73 filling the space. (Harkin, col. 9, ll. 14-23.)

6. Although an LC display device is used in this example, Harkin mentions that other types of display devices, comprising other kinds of electro-optic materials, for example electroluminescent or electrochromic display devices, could be used instead. (Harkin, col. 9, ll. 64-67.)

## PRINCIPLES OF LAW

Section 103 forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

*KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

Such a showing requires:

‘some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness’ . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

*Id.* at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Therefore, in analyzing a rejection under 35 U.S.C. § 103, we must “determine whether there was an apparent reason to combine the known elements in the fashion claimed.” *KSR*, 550 U.S. at 418. The proper inquiry is whether a person of ordinary skill in the art would have seen a benefit to combining the prior art teachings. *KSR*, 550 U.S. at 424.

The evidence of record is insufficient to show obviousness if it merely suggests “to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it.” *In re O’Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988).

Further, a rejection based on § 103 must rest upon a factual basis rather than conjecture or speculation. “Where the legal conclusion [of obviousness] is not supported by the facts it cannot stand.” *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967). *See also In re Kahn*, 441 F.3d at 988.

## ANALYSIS

### *Rejection of claims over Ritter, Harkin, and Wang*

The Examiner relies on Harkin's suggestion to use an electroluminescent display instead of an LC display to conclude that Harkin provides the claimed light emitting element missing in the combination of Ritter and Wang (Ans. 11-12).<sup>4</sup> The Examiner further supports the obviousness of the claimed subject matter based on an alleged showing of all the claimed elements in the prior art and a conclusion that the combination of the references would have been obvious to one of ordinary skill in the art (Ans. 12-13). There are two problems with this reasoning: (1) the Examiner has not pointed to any evidence of record that Harkin's electroluminescent display has pixels, each of which includes a light emitting element and a sensor; and (2) the Examiner has not provided "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

As argued by Appellants (App. Br. 7), the only light source disclosed in Harkin is in the biometric sensor which is disposed under the sensing array 10 (FF 1-4). The sensor 60 is different from the array of sensing elements (FF 3, 4) while the sensing elements array is also separate and distinct from the flat panel display device 70 (FF 5). Further, because the only light source suggested by Harkin is in the sensor, separate from the sensing array and the display device, even if the teachings of Ritter, Harkin, and Wang were combined, we do not see how this combination would have

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<sup>4</sup> The Examiner additionally relies on Tang (US 5,550,066, Aug. 27, 1996) to show that electroluminescent devices include an anode, a light emitting layer, and a cathode (Ans. 12).



led one having ordinary skill in the art to redesign Harkin's sensor array and display to include a light emitting element and a sensor in each of the pixels in the display device.

With respect to the general suggestion in Harkin that a display device may comprise an electroluminescent device, we find that the Examiner has not pointed to any portion of the reference to provide any details as to how the pixels of such a display device may each include a light emitting element and a sensor. We further find that the nominal reference to an electroluminescent display device in Harkin apparently is applicable only to the display 70 in Figure 6, while the sensing array 10 and the biometric sensor 60 are intended to remain unchanged (FF 6). In that regard, we find such general suggestion "to explore" using an electroluminescent display device to be insufficient to lead the ordinary skilled artisan to add a light emitting element to each pixel and support a prima facie case of obviousness.

While Tang is not before us in this appeal because it was not relied on in the final rejection of the claims, we note that its teachings related to the structure of an electroluminescent device add nothing to Harkin's mere suggestion for using such a display device. Therefore, we find that the Examiner has not articulated sound reasons for asserting that using a light emitting element and a sensor in each display pixel in Harkin would have been obvious. Harkin provides no direction as to placing the light source from sensor 60 and the sensing elements from sensor array 10 in each pixel of display 70. *O'Farrell*, 853 F.2d at 903-04. We conclude that the Examiner did not make a prima facie case for obviousness based on the record before this panel.

Thus, since the combination of the references does not teach or suggest all the recited requirements of claim 1, as well as the other independent claims that include similar limitations, and the Examiner's conclusion that it would have been obvious to the skilled artisan to combine the references is not supported by the teachings or suggestions of Ritter, Harkin, or Wang, the 35 U.S.C. § 103(a) of claims 1-3, 6-9, 12, 35, 38, 43, 46, 51-53, 56-59, 62, 85, 88, 93, and 96 over Ritter in view of Harkin and Wang cannot be sustained.

*Rejection of claims over Ritter, Harkin, Wang, and Nishimura*

With respect to the rejection of claims 109-116, we observe that the Examiner cited Nishimura only to meet the limitations of these dependent claims and pointed to nothing in the reference that would provide a reason to combine the teachings of Ritter, Harkin, and Wang. For the reasons discussed above, we conclude that a prima facie case for obviousness of these claims has not been made, and thus, we cannot sustain the 35 U.S.C. § 103 rejection of claims 109-116 over Ritter, Harkin, Wang, and Nishimura.

## CONCLUSION

On the record before us, we find that the Examiner failed to make a prima facie case that the combination of Ritter, Harkin, and Wang would have taught or suggested using a light emitting element and a sensor in each of the display pixels. Therefore, Appellants have shown that the Examiner's combination of the reference teachings is improper and that the Examiner erred in rejecting the claims under 35 U.S.C. § 103.

DECISION

The decision of the Examiner rejecting claims 1-3, 6-9, 12, 35, 38, 43, 46, 51-53, 56-59, 62, 85, 88, 93, 96, and 109-116 is reversed.

REVERSED

KIS

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